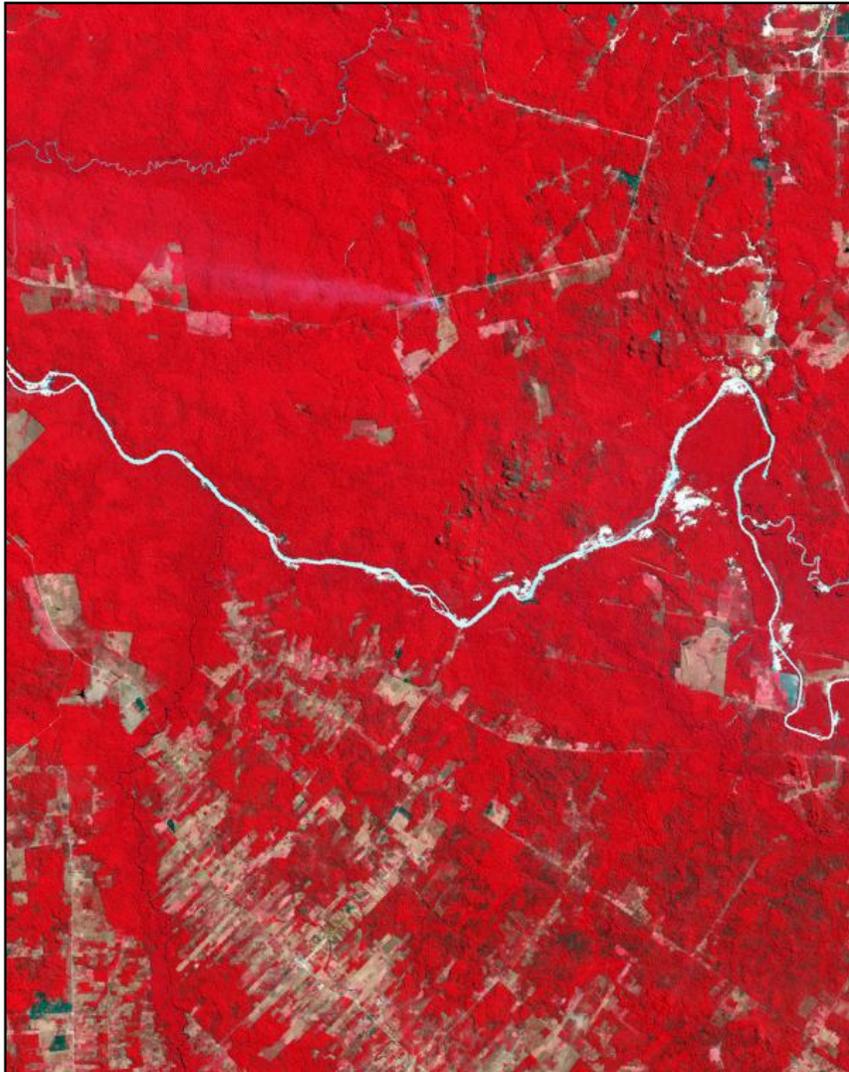


Biodiversity offsets: Managing cumulative impacts of large land-based investments on Africa's forest landscapes

The case of the Tridom landscape of Central Africa

Fabien Quétier, Pauwel de Wachter, Hélène Dessard, Melina Gersberg, Durrel Nzene Halleson, Maxime Nzita Nganga di Mavambu, Eugène Ndong Ndoutoume, Laurène Feintrenie & Claude Garcia

Land conversion is massive



1992



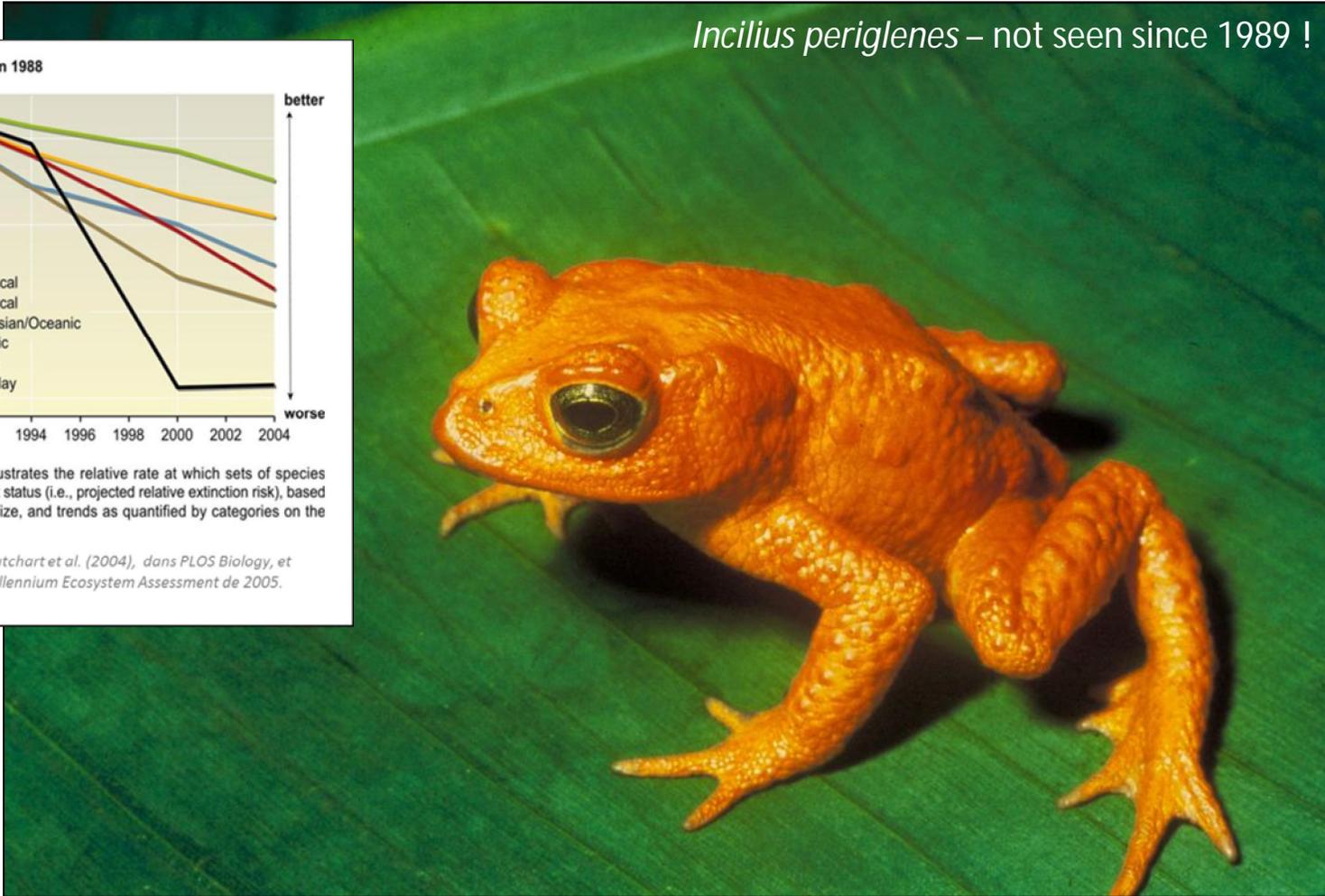
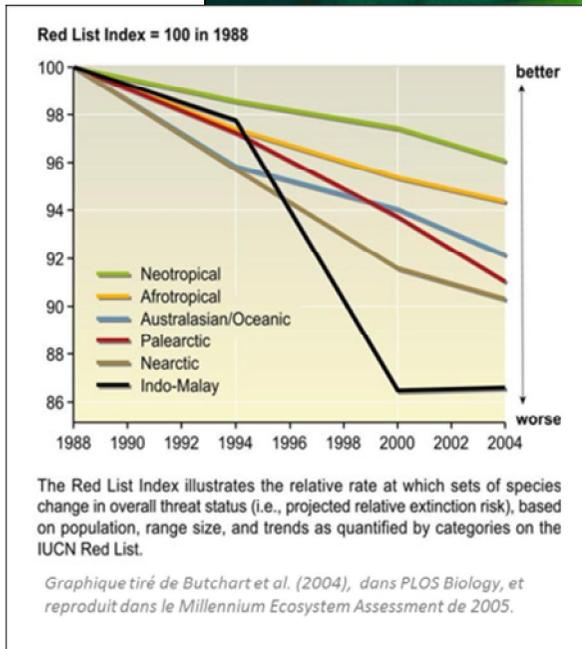
2006

Infrastructure and extractive industries



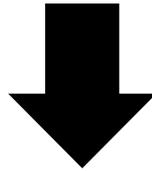
Species are vanishing

Incilius periglenes – not seen since 1989 !

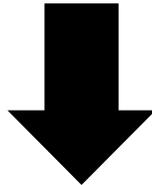


The Mitigation Hierarchy

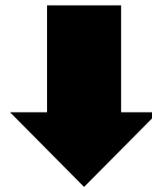
Avoid



Reduce



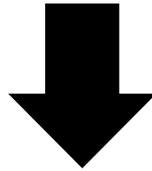
Restore



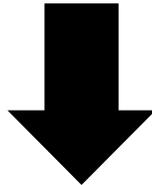
Residual Impact

The Mitigation Hierarchy

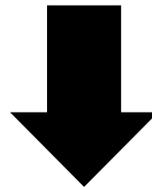
Avoid



Reduce



Restore



Compensate / Offset

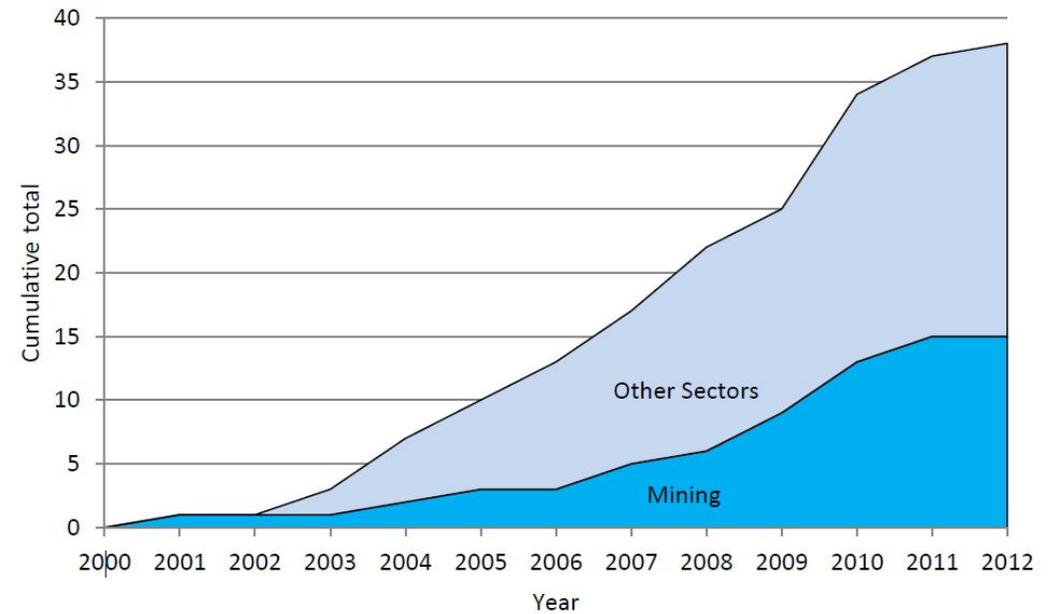
Achieving NNL through offsets



*Biodiversity offsets are **measurable conservation outcomes** resulting from actions designed to compensate for **significant residual adverse biodiversity impacts** arising from project development **after appropriate prevention and mitigation measures have been taken.***

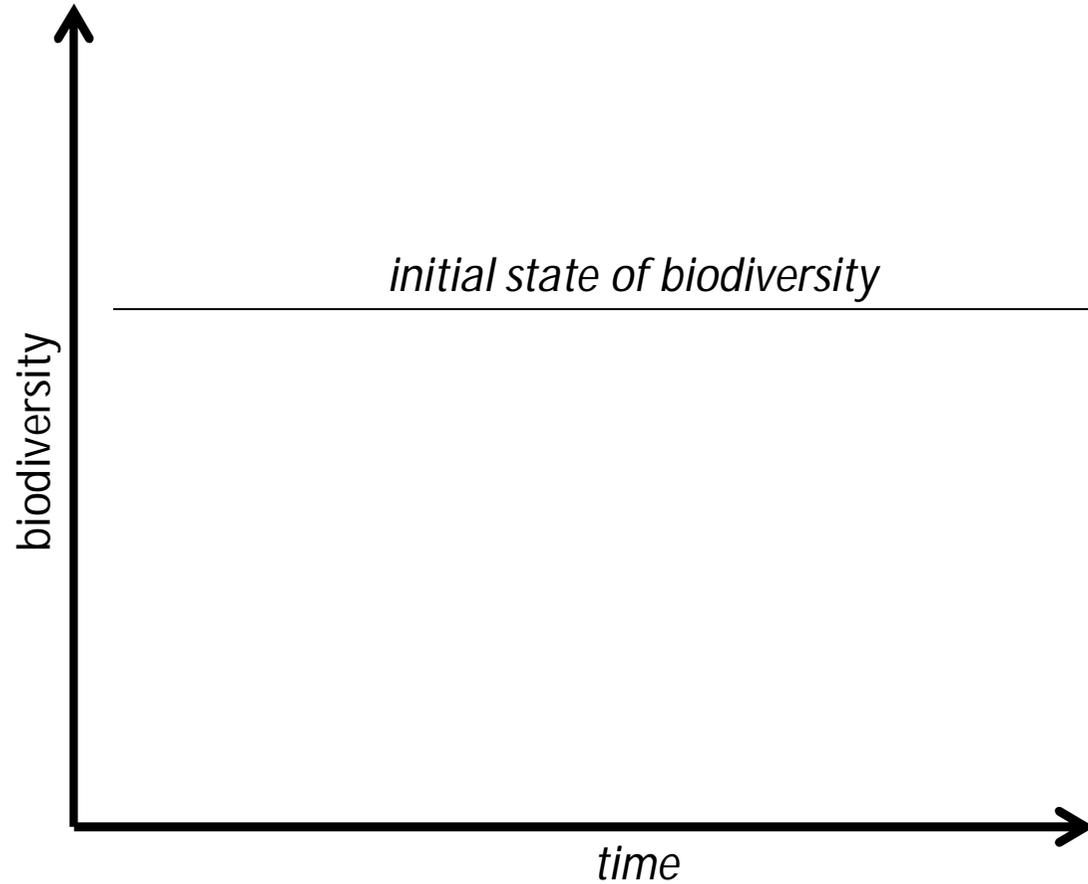
*Goal is to achieve **no net loss** and preferably a **net gain** of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with biodiversity.*

Drivers of NNL goals

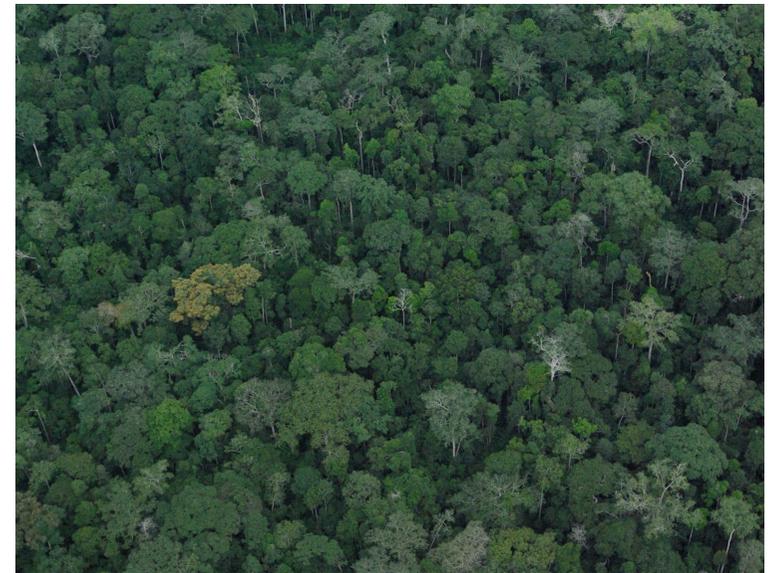
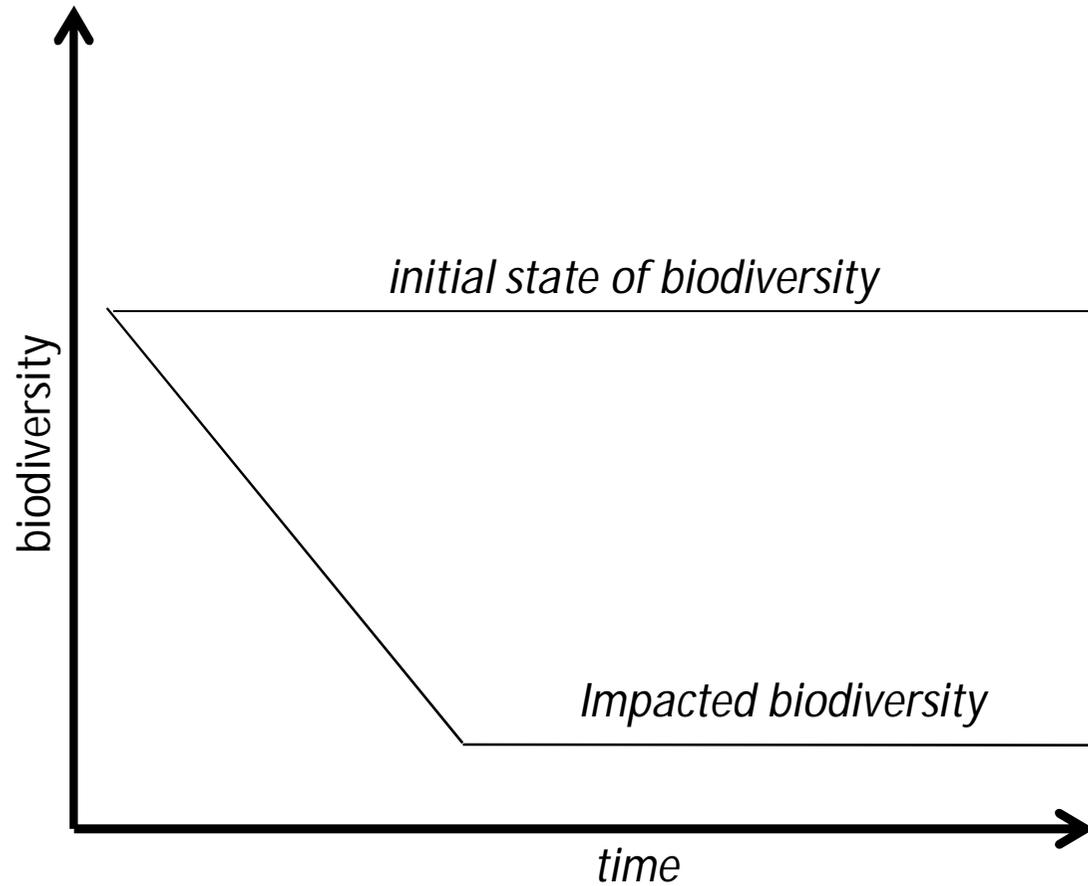


Rainey et al. (2014), Oryx

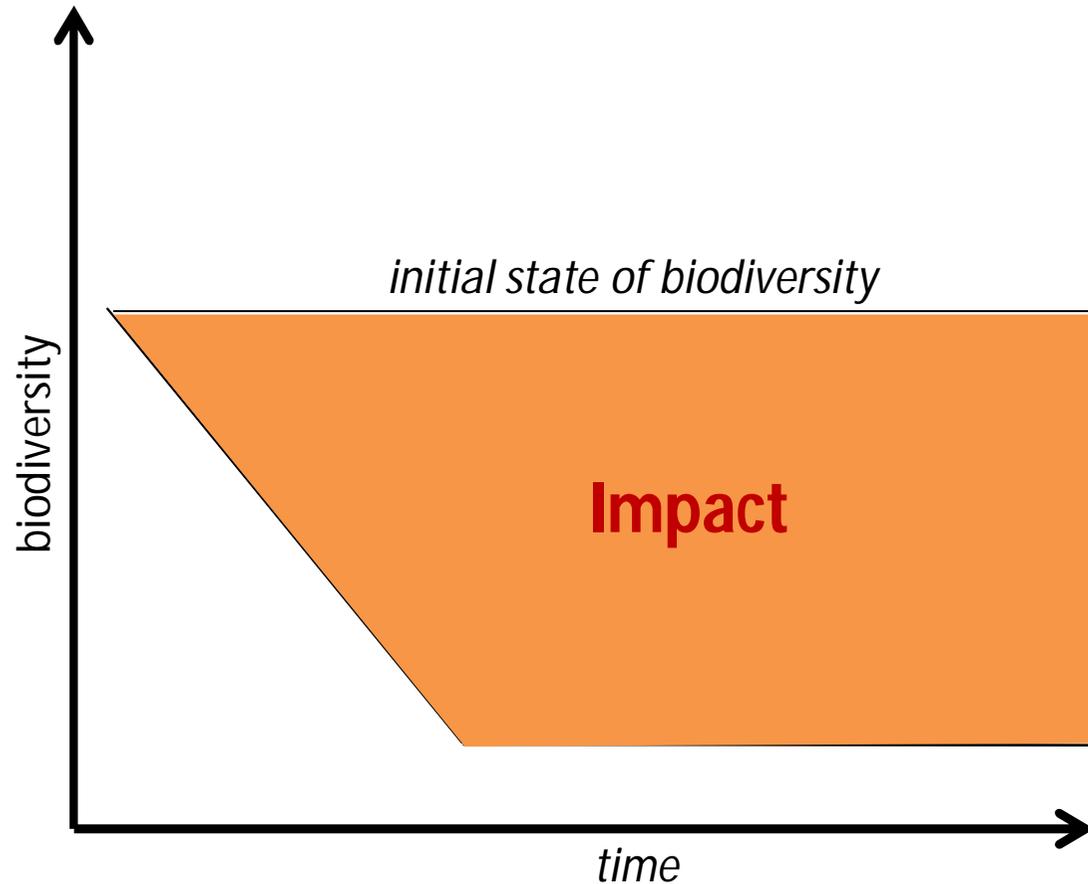
Applying the Mitigation Hierarchy



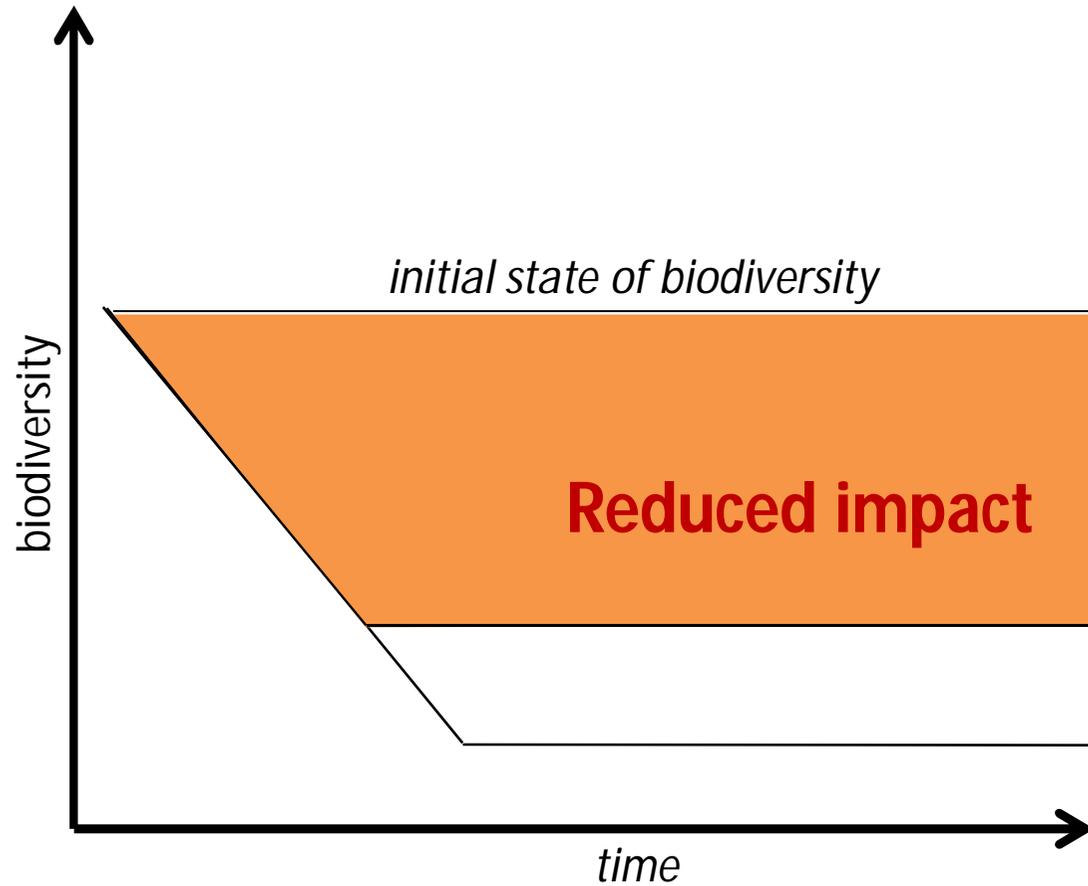
Applying the Mitigation Hierarchy



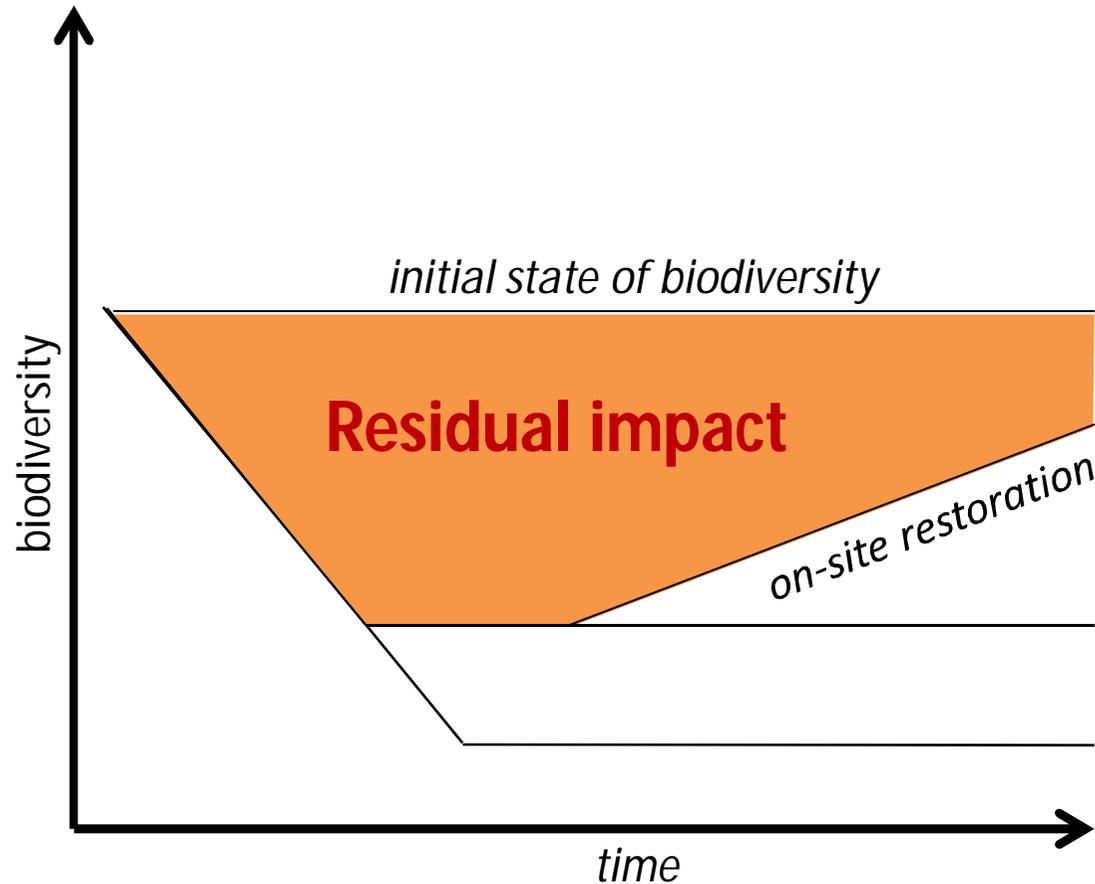
Applying the Mitigation Hierarchy



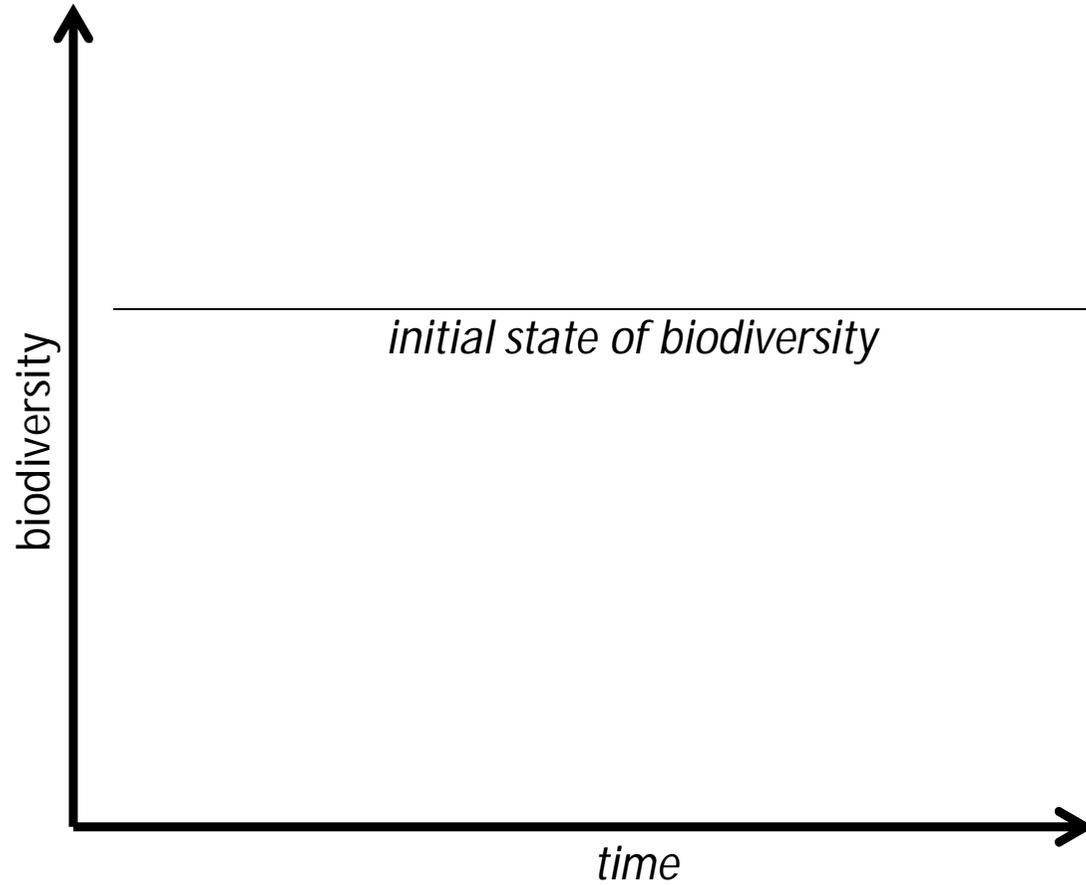
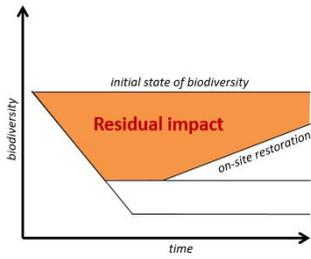
Applying the Mitigation Hierarchy



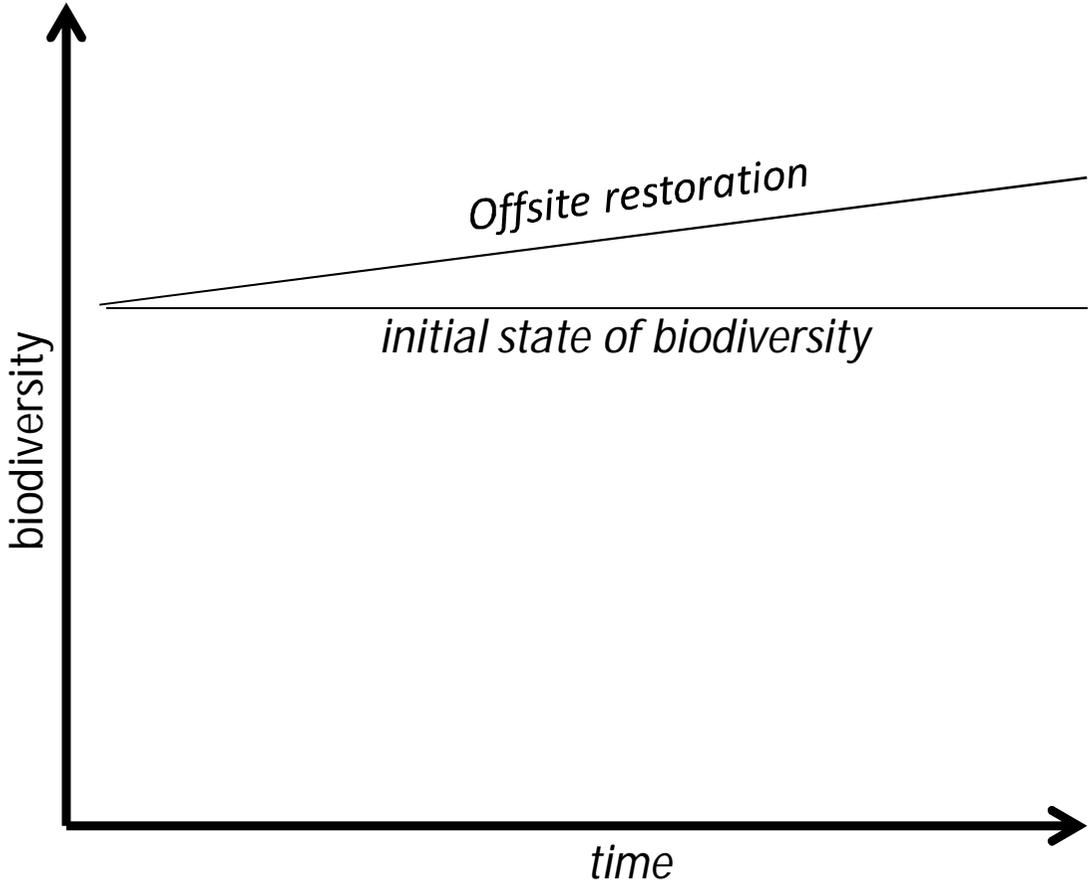
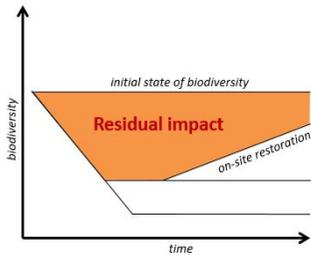
Applying the Mitigation Hierarchy

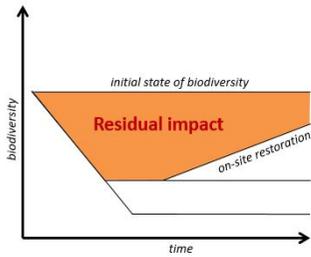


Offsets

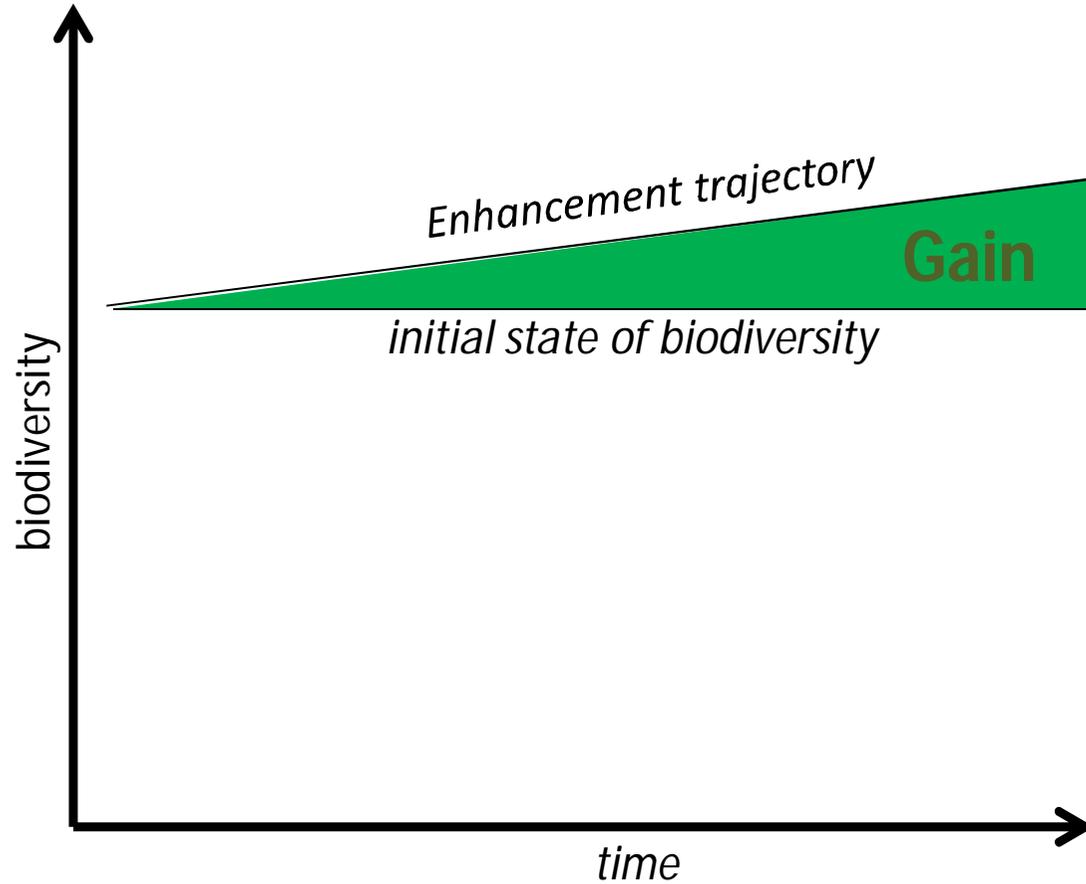


Restoration offsets



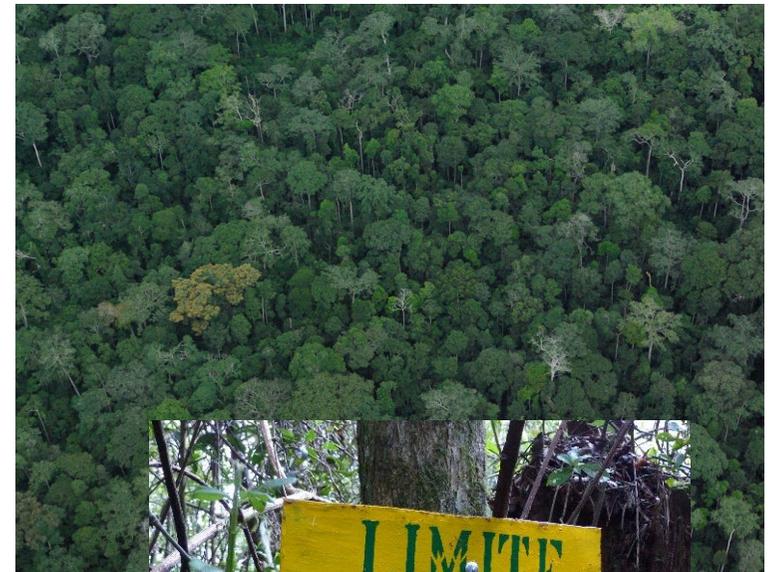
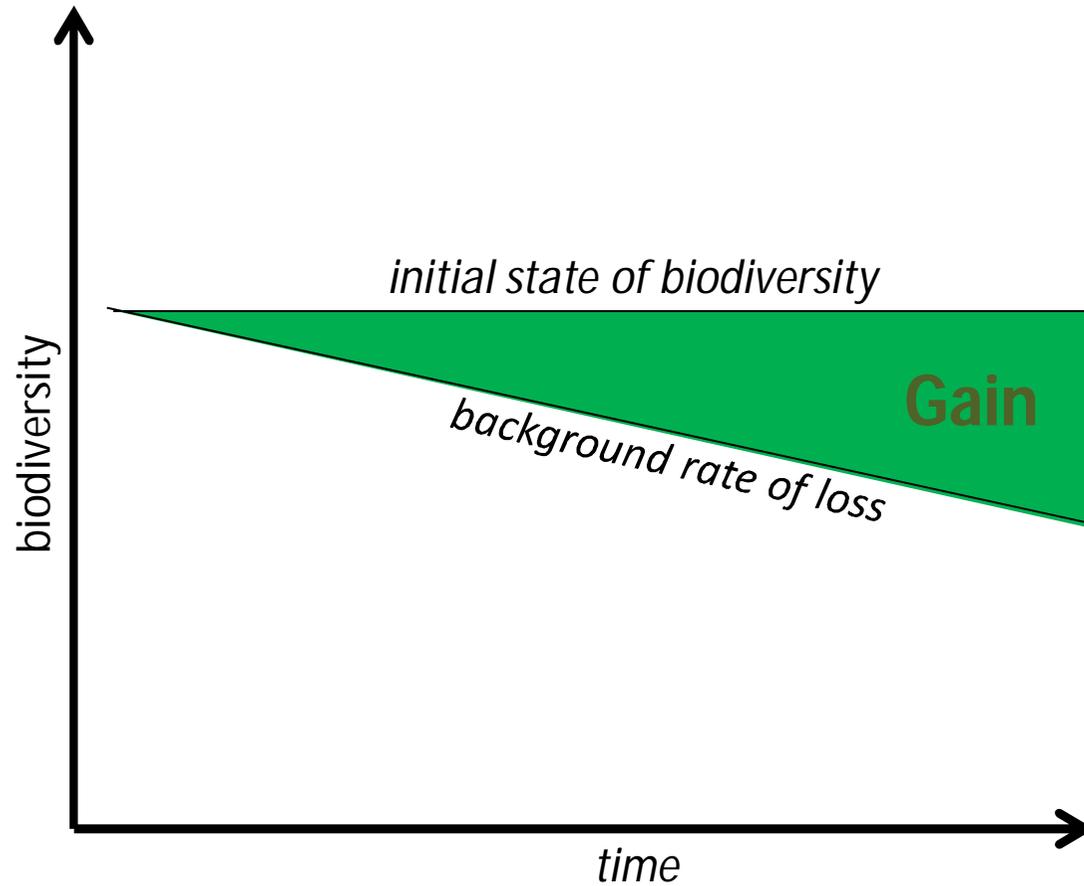
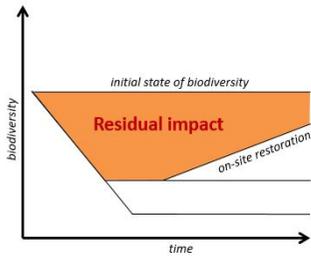


Restoration offsets

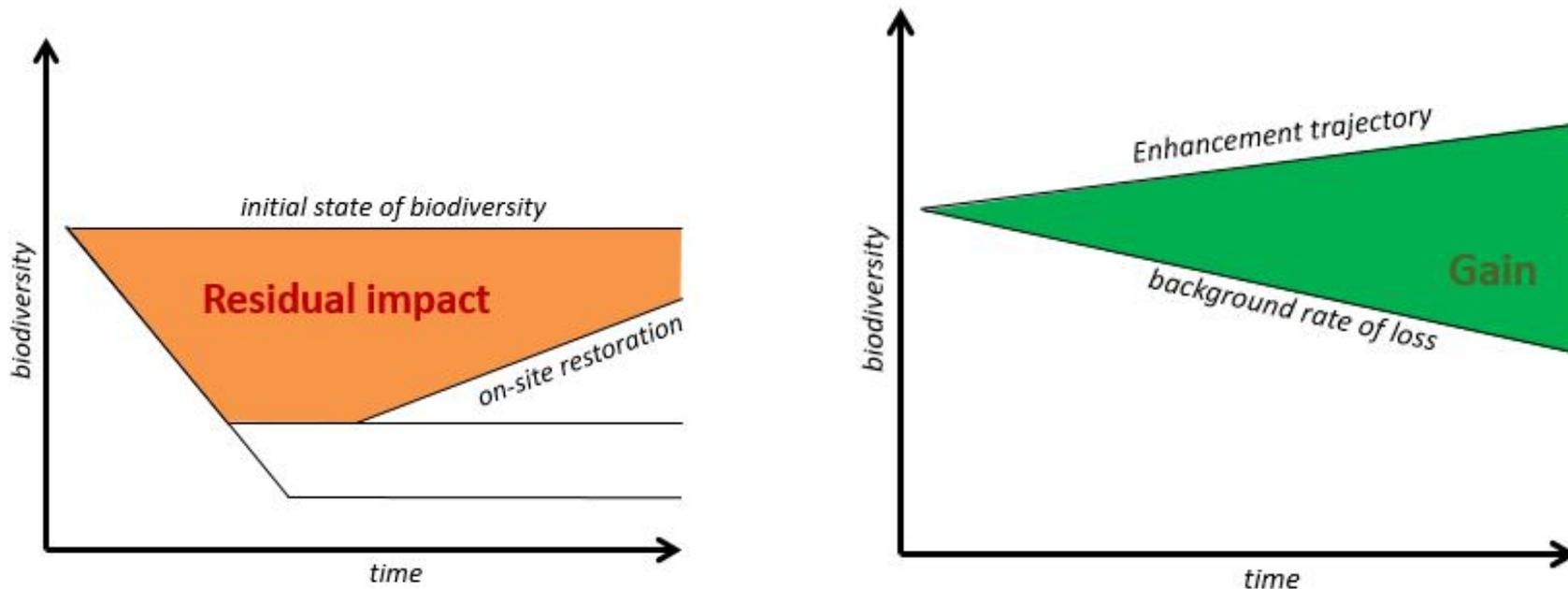


© Victor Mbolo, WWF

Averted-loss offsets



Demonstrating No Net Loss

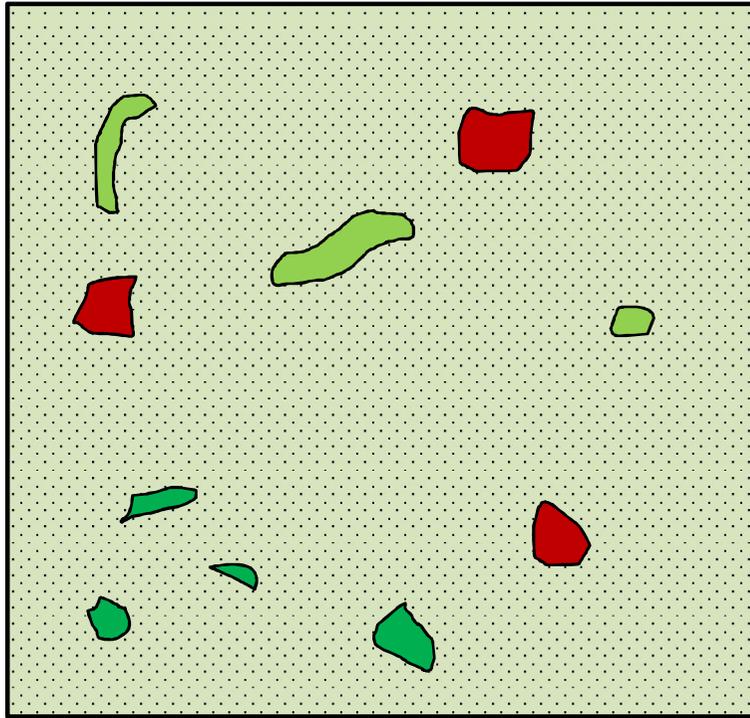


Equivalence : in-kind offsets and like-for-like requirements

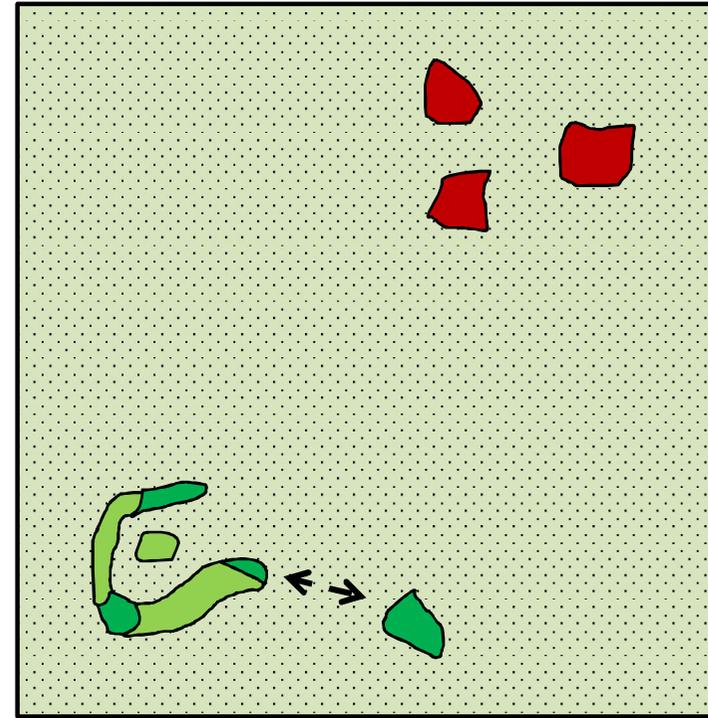
No Net Loss: gains equal losses

Net Gain: gains exceed losses

Achieving No Net Loss



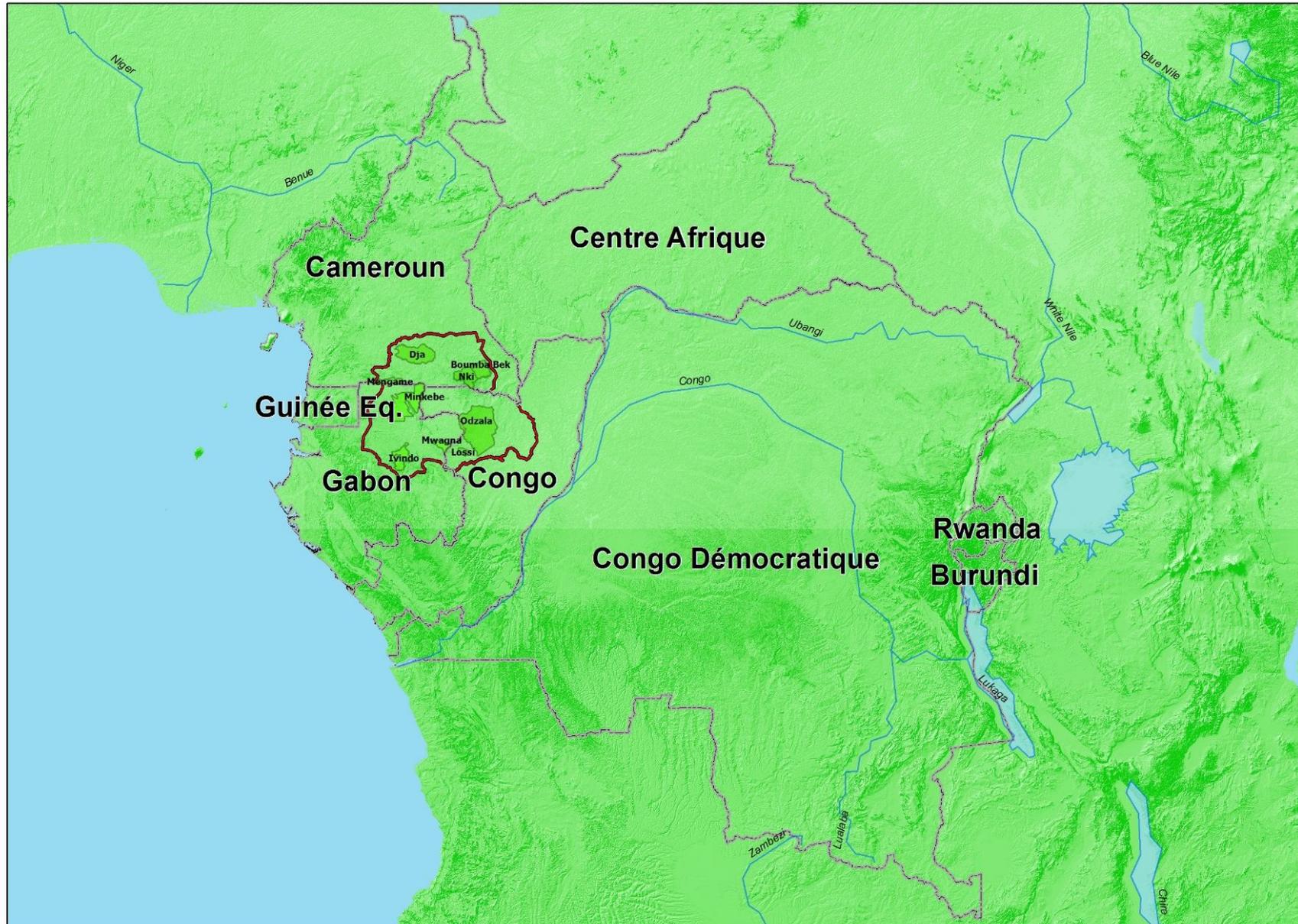
Reactive project by project approach



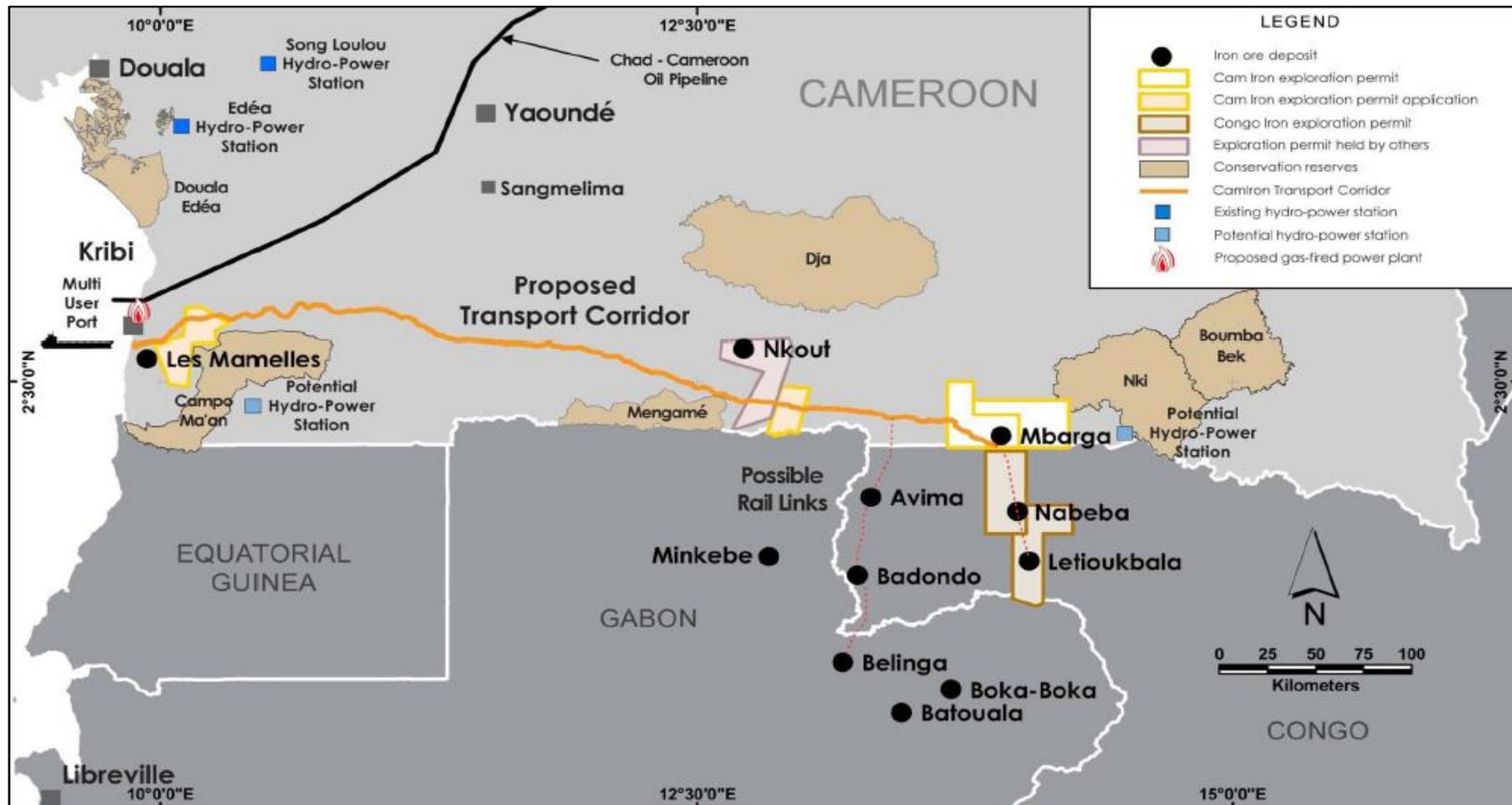
Proactive, anticipated, approach that builds synergies with other conservation & restoration actions

Quétier et al. (2014) *Environmental Science & Policy*

The TRIDOM landscape

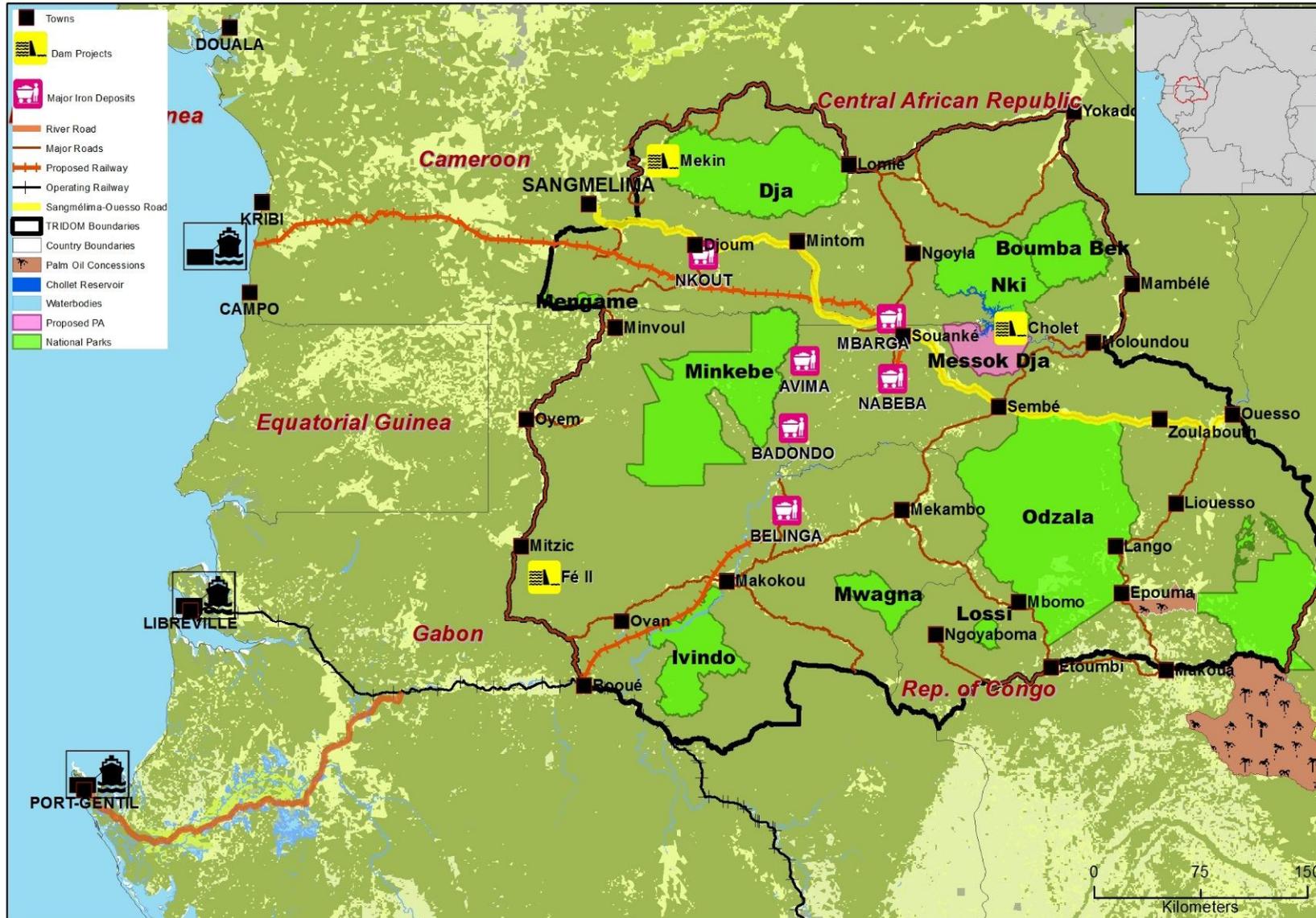


The Mbalam and Nabeba deposits

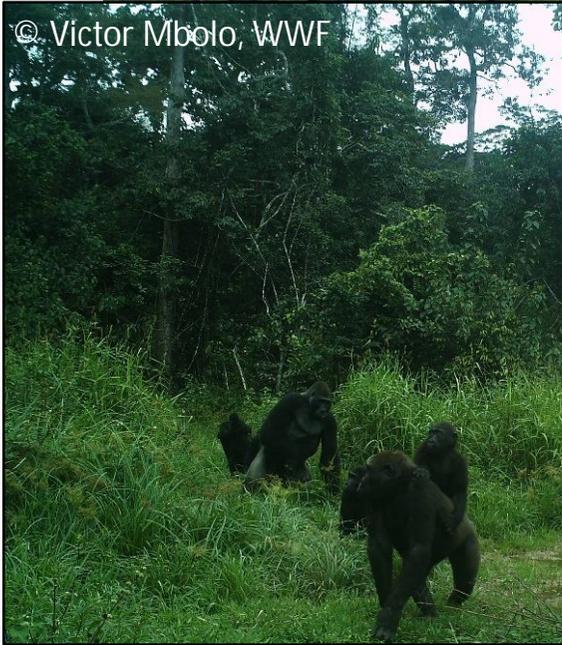


Regional map indicating the main iron ore deposits and transport infrastructure (source: ESIA of Mbalam project)

The TRIDOM landscape



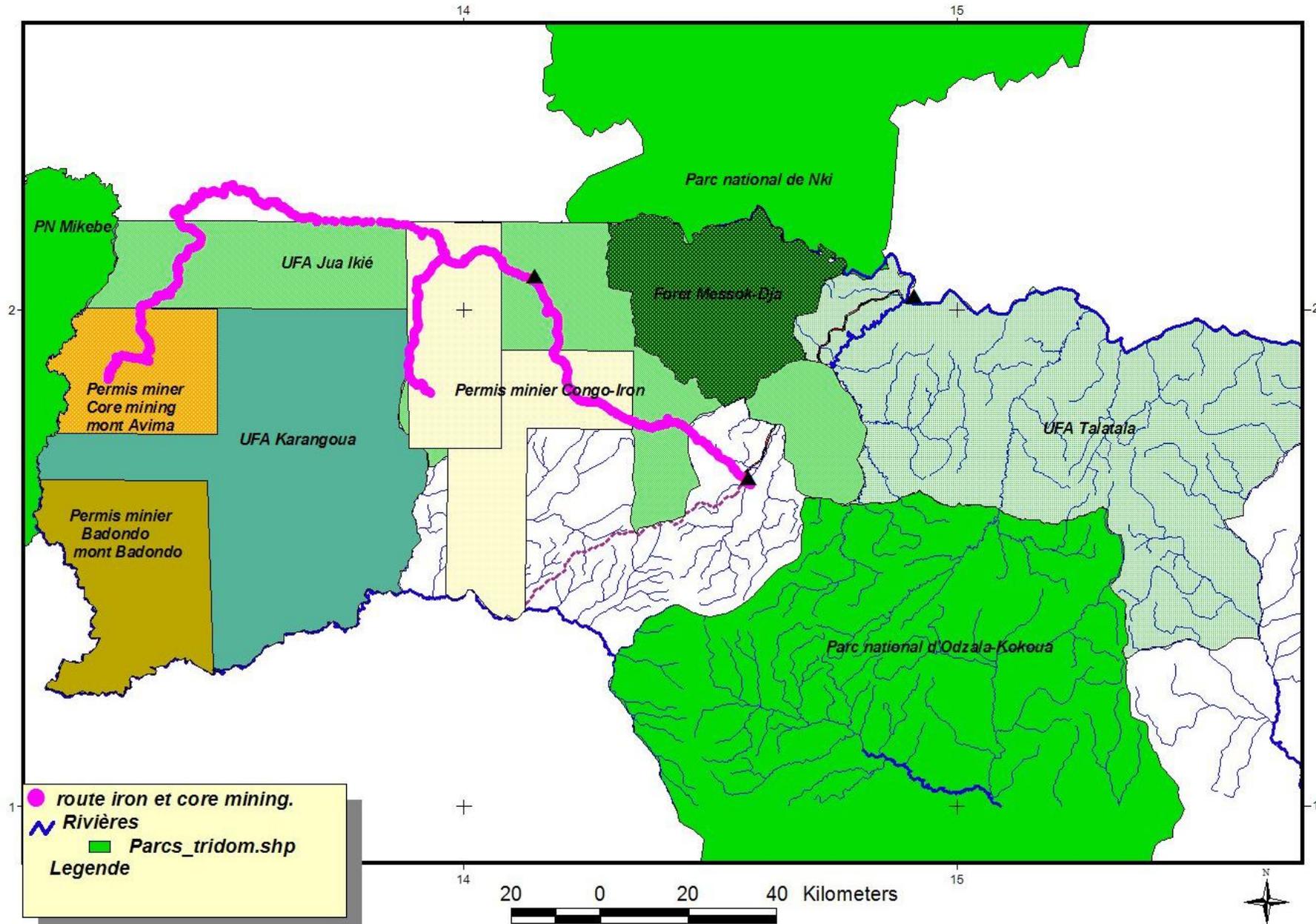
Conservation issues



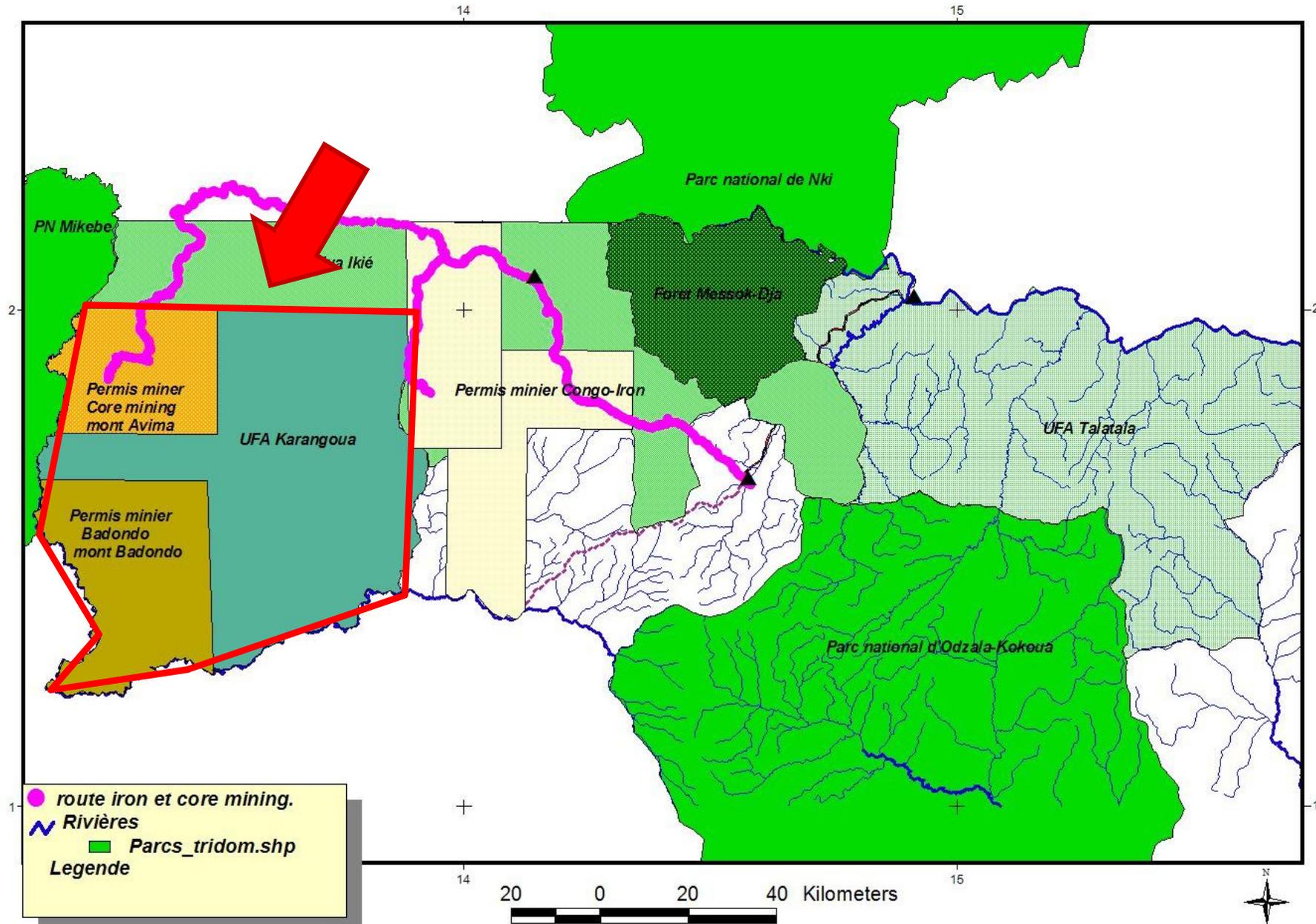
Fighting the empty forest syndrome



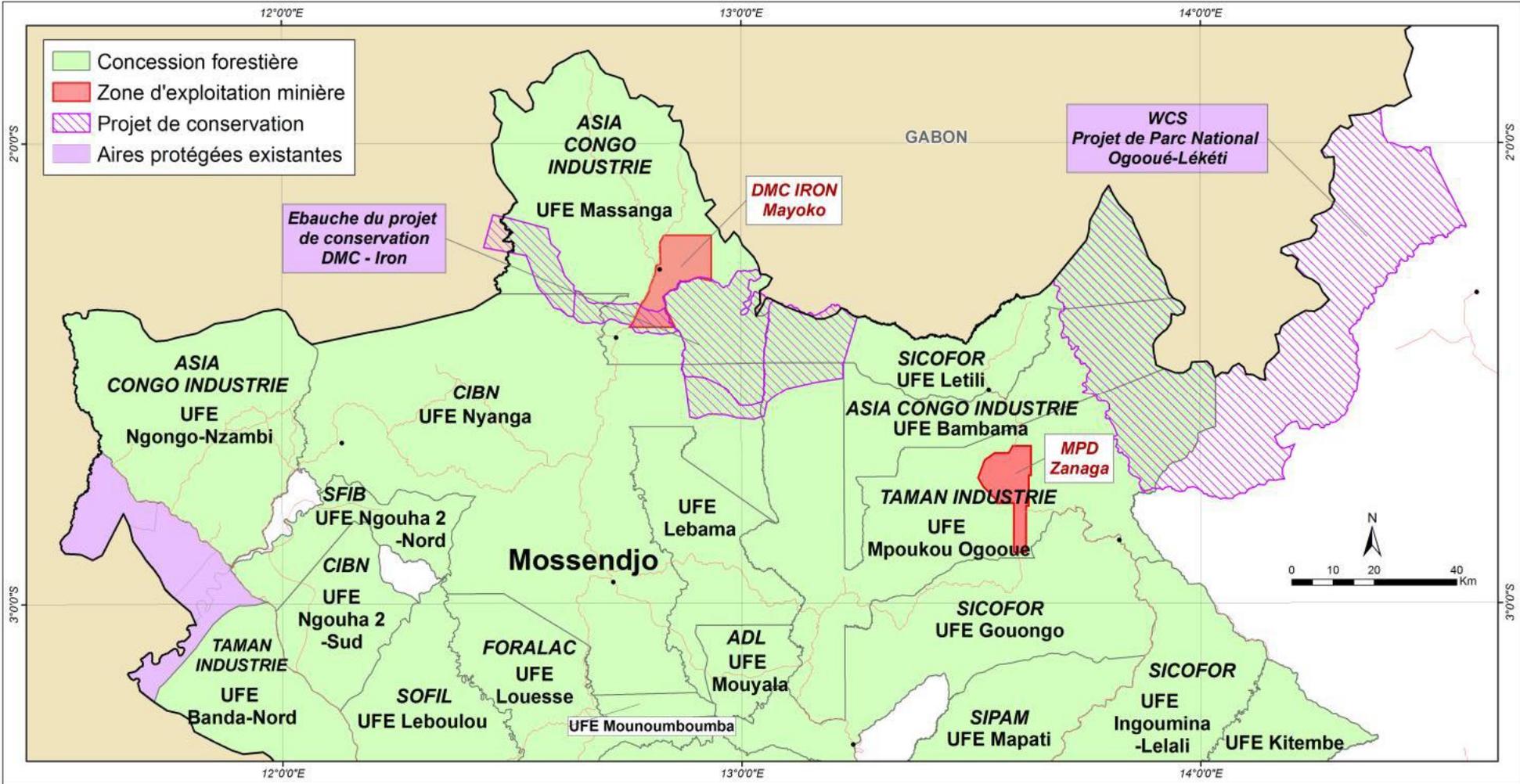
Karagoua: the last opportunity?



Karagoua: the last opportunity?



Zanaga & Mayoko (Rep. Congo)



Source: PAGEF

Achieving No Net Loss

- Measurable conservation outcomes
 - Metrics
 - Biodiversity baselines
 - Biodiversity targets
- On the ground action
 - Technical and social feasibility
 - Financial feasibility and legal tools
- Monitoring and reporting
 - Third party verification (and enforcement)
 - Adaptive management



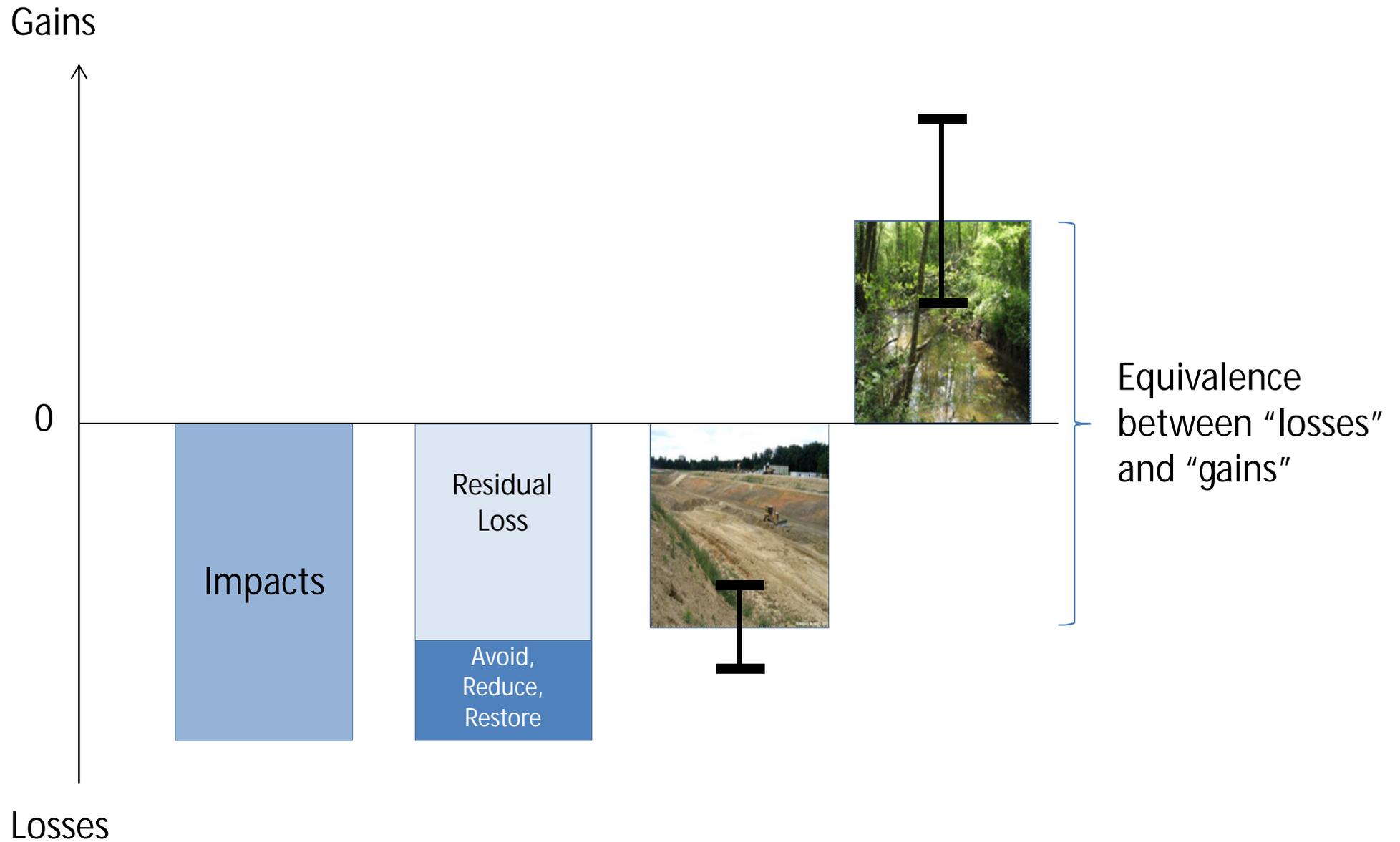
Biodiversity offsets: Managing cumulative impacts of large land-based investments on Africa's forest landscapes

The case of the Tridom landscape of Central Africa

Fabien Quétier*, Pauwel de Wachter, Hélène Dessard, Melina Gersberg, Durrel Nzene Halleson, Maxime Nzita Nganga di Mavambu, Eugène Ndong Ndoutoume, Laurène Feintrenie & Claude Garcia

* fquetier@biotope.fr / +33 621 512 666

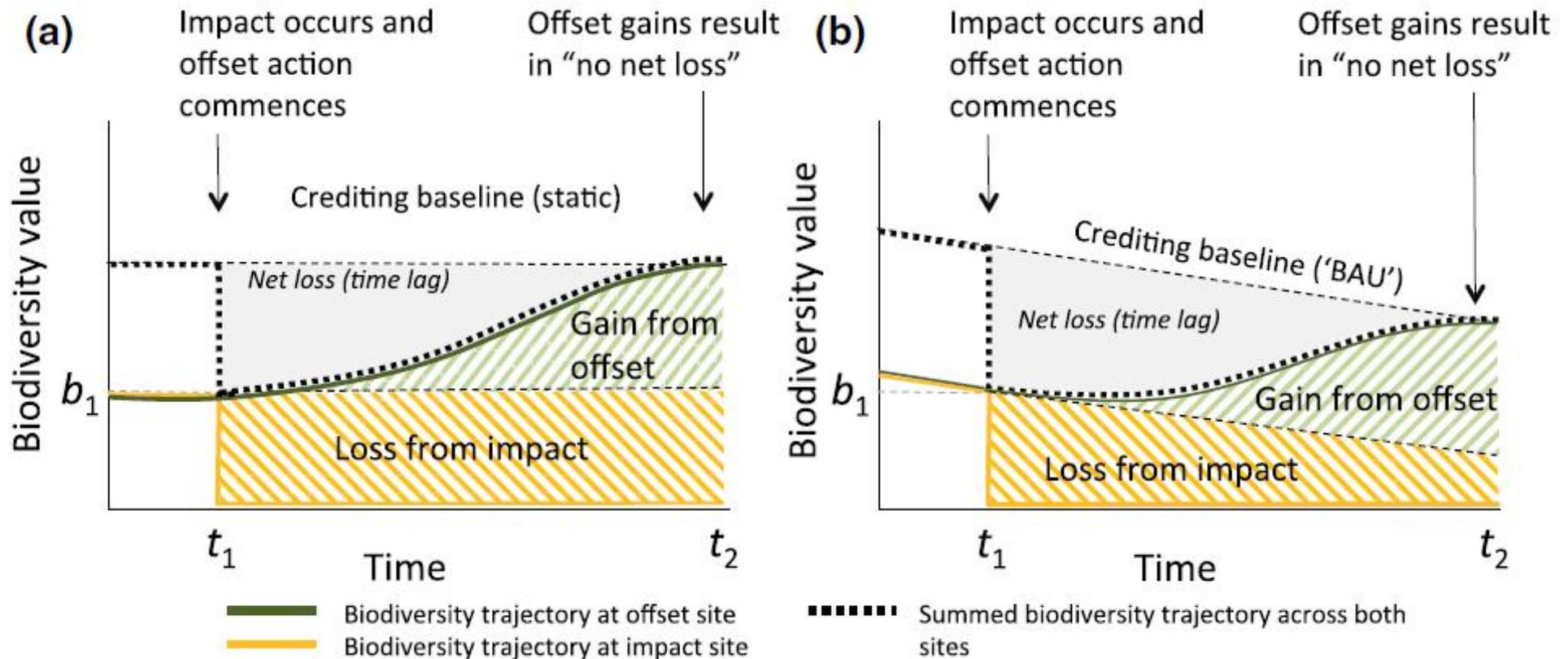
No Net Loss



BBOP Principles

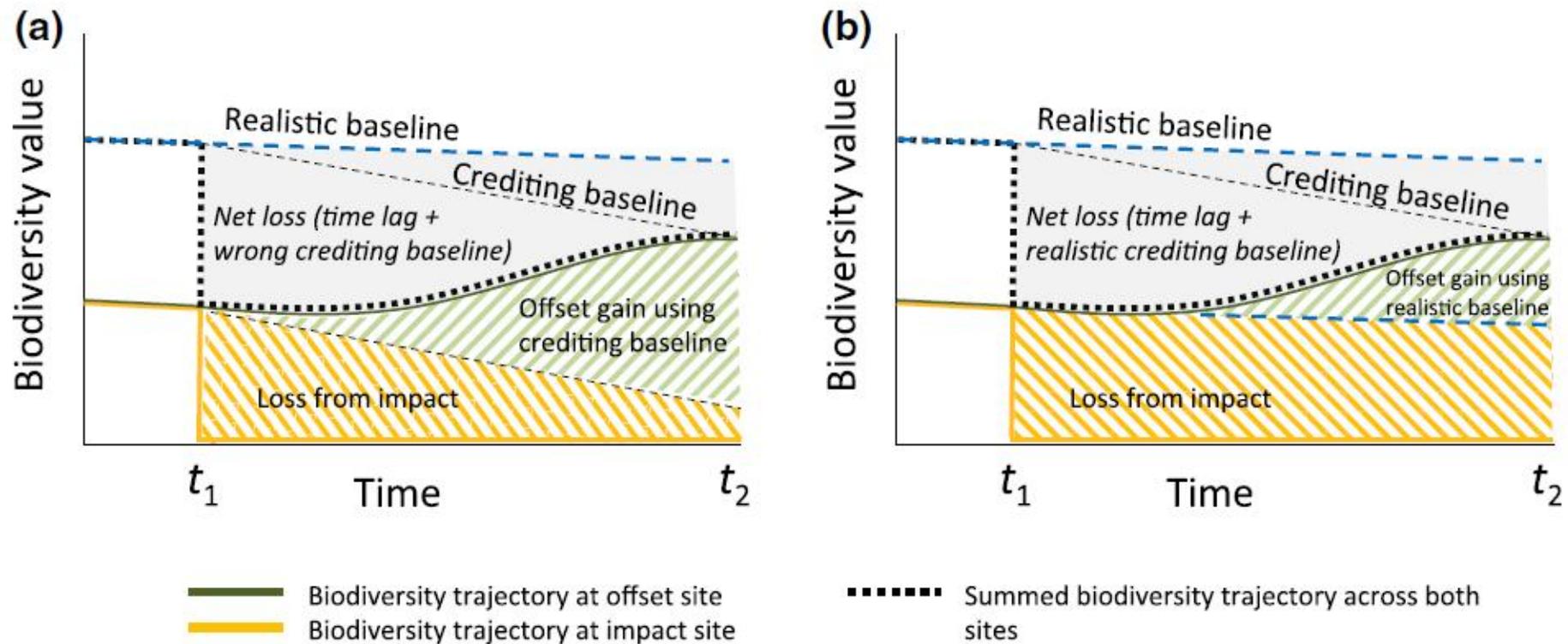
1. **Adherence to the mitigation hierarchy:** A biodiversity offset is a commitment to compensate for significant residual adverse impacts on biodiversity identified after appropriate avoidance, minimisation and on-site rehabilitation measures have been taken according to the mitigation hierarchy
2. **Limits to what can be offset:** There are situations where residual impacts cannot be fully compensated for by a biodiversity offset because of the irreplaceability or vulnerability of the biodiversity affected.
3. **Landscape context:** A biodiversity offset should be designed and implemented in a landscape context to achieve the expected measurable conservation outcomes taking into account available information on the full range of biological, social and cultural values of biodiversity and supporting an ecosystem approach
4. **No net loss:** A biodiversity offset should be designed and implemented to achieve in situ, measurable conservation outcomes that can reasonably be expected to result in no net loss and preferably a net gain of biodiversity
5. **Additional conservation outcomes:** A biodiversity offset should achieve conservation outcomes above and beyond results that would have occurred if the offset had not taken place. Offset design and implementation should avoid displacing activities harmful to biodiversity to other locations.
6. **Stakeholder participation:** In areas affected by the development project and by the biodiversity offset, the effective participation of stakeholders should be ensured in decision-making about biodiversity offsets, including their evaluation, selection, design, implementation, and monitoring.
7. **Equity:** A biodiversity offset should be designed and implemented in an equitable manner, which means the sharing among stakeholders of the rights and responsibilities, risks and rewards associated with a development project and offset in a fair and balanced way, respecting legal and customary arrangements. Special consideration should be given to respecting both internationally and nationally recognised rights of indigenous peoples and local communities
8. **Long-term outcomes:** The design and implementation of a biodiversity offset should be based on an adaptive management approach, incorporating monitoring and evaluation, with the objective of securing outcomes that last at least as long as the development project's impacts and preferably in perpetuity
9. **Transparency:** The design and implementation of a biodiversity offset, and communication of its results to the public, should be undertaken in a transparent and timely manner.
10. **Science and traditional knowledge:** The design and implementation of a biodiversity offset shall be a documented process informed by sound science, including an appropriate consideration of traditional knowledge

Averted-loss offsets



Gordon et al. (2015), *Journal of Applied Ecology*

Overestimating averted losses

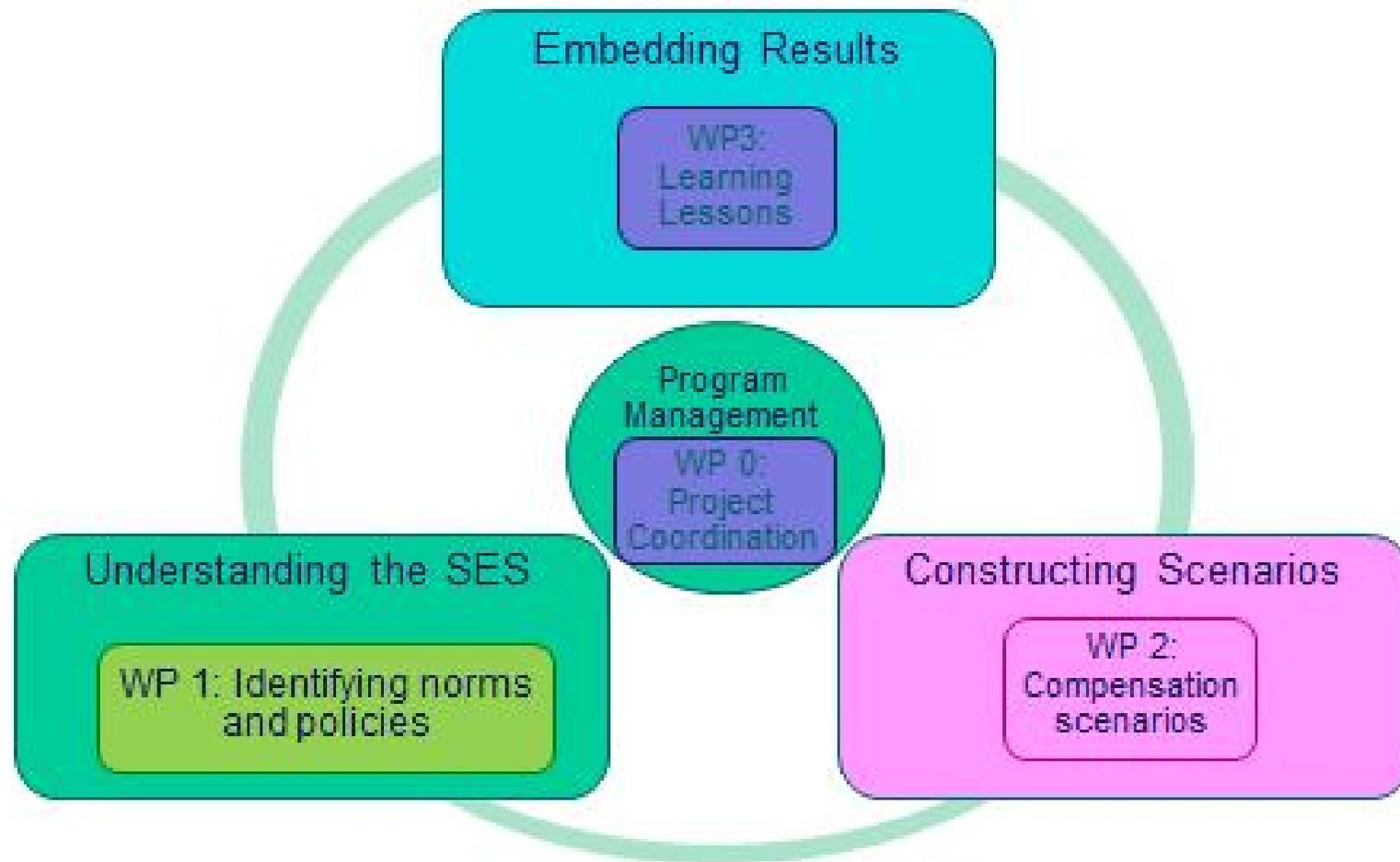


Gordon et al. (2015), *Journal of Applied Ecology*

Objectives of CoForSet

- (1) **Understand the system:** Identifying, characterizing and analyzing existing and proposed offsetting mechanisms and social and environmental responsibility policies developed by public and private operators relevant to the TriDom landscape, their modus operandi as well as the rules, norms and policies surrounding their development.
- (2) **Construct Scenarios:** Developing participatory, trans-sectoral scenarios to analyze the links between the implementation of large-scale offsetting schemes, the changes of biodiversity and the delivery of ecosystem services, and the development trajectories of the SES.
- (3) **Embedd Results:** Proposing narratives of possible futures for the TriDom landscape and guidelines for the design and implementation of offsetting mechanisms. The narratives and guidelines will be disseminated through an efficient science policy interface, embedding the results of our research in the decision making process at the regional and national levels

Work packages



CoForSet + CoForTips

